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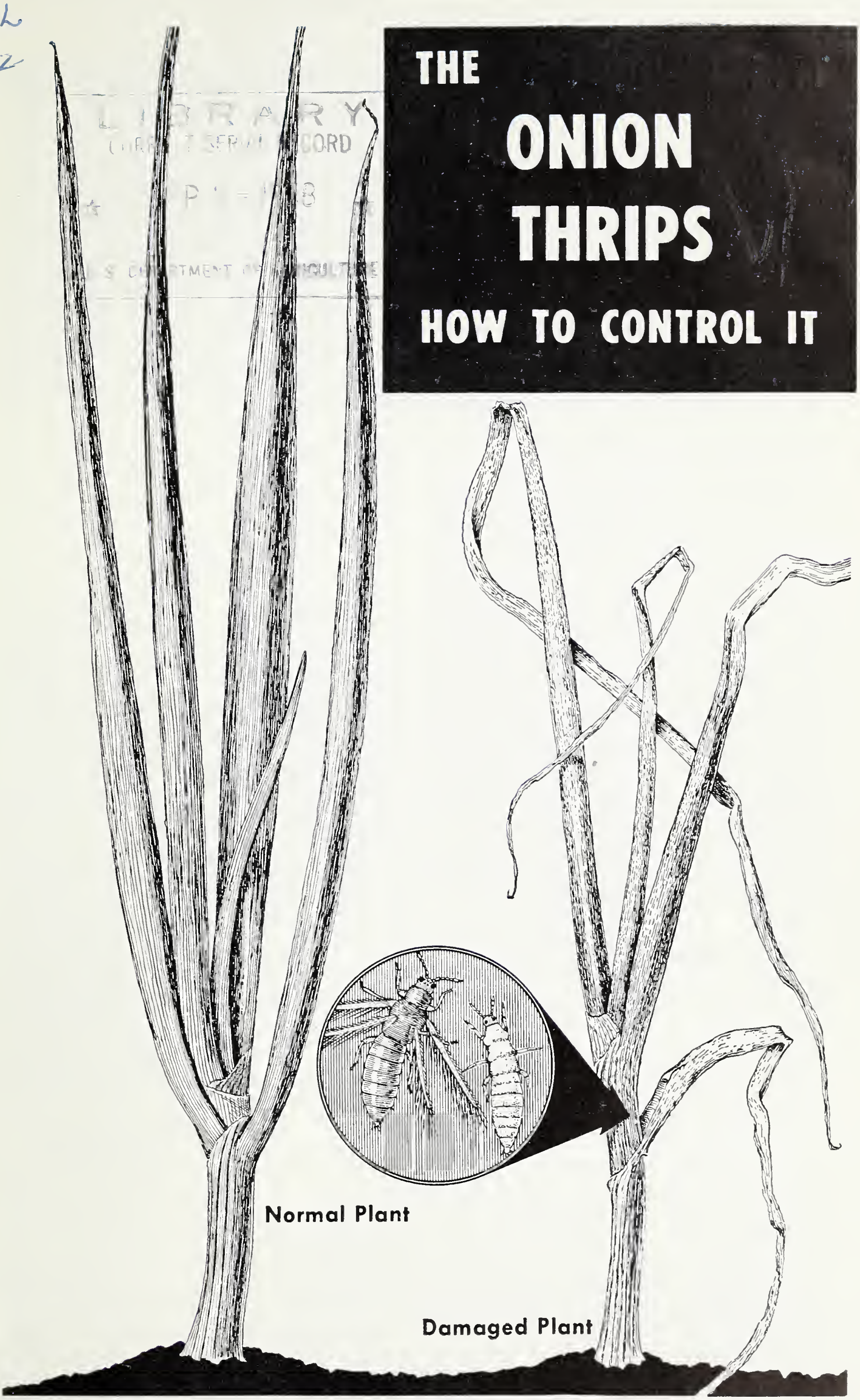
THE ONION THRIPS

HOW TO CONTROL IT



LEAFLET No. 372

UNITED STATES DEPARTMENT OF AGRICULTURE

THE ONION THRIPS *How To Control It*

The onion thrips,[1] a tiny insect, damages all varieties of onions. It occurs in all regions where onions are grown. Unless controlled, it can cut yields as much as 50 percent.

Onion thrips also attack cauliflower, cabbage, spinach, beets, and turnips.

In the South, they feed throughout the year. In the North, they feed only during warm weather; they hibernate in the remnants of onion crops and in the crowns of alfalfa and clover.

Infestations increase slowly in cool weather and rapidly in warm weather. Severe outbreaks usually occur when it is hot and dry.

Both the adult and immature (larva) onion thrips damage plants. They pierce the leaf tissues with their sharp mouth parts and then suck out the juices. This causes whitish or silver blotches on the leaves, a condition that is sometimes called white blast, white blight, or silver top. In heavily damaged fields, leaves become curled, crinkled, and twisted, and growth stops; then the plants die.

Onion thrips usually live at the base of a plant, where the leaves come together, and in the seedhead.

Life History and Habits

The onion thrips passes through the egg, larval, pupal, and adult stages in its development. A generation is completed in about 2 weeks. In Iowa, 5 to 8 generations occur each year; in California, as many as 10.

A generation begins when the female lays her small whitish eggs in the tender tissues of an onion plant. In 4 to 10 days, the eggs hatch into tiny white larvae.

Larvae begin to feed immediately on the tender parts of the center leaves and can be seen by parting the leaves. They molt, or shed their skins, twice. After about 5 days of feeding, they burrow into the soil and transform to pupae. The adults emerge in about 4 days.

Adults are brownish, and about 1/25 inch long. They have two pairs of fringed wings; they fly from plant to plant and from field to field.

Large numbers of adults migrate to onion fields in the spring and summer after feeding on other host plants. In Idaho, migration flights usually begin in June.

Control

You can control onion thrips by applying an insecticide to infested fields. Insecticides are available from dealers as dusts, ready for use, and as emulsifiable concentrates and wettable powders, which can be mixed with water and applied as sprays.

Dusts can be applied with suitable hand or power equipment or by aircraft.

Apply one of the following dusts at the rate of 30 pounds per acre: 10-percent DDT, 20-percent toxaphene, 5-percent malathion, 1½-percent heptachlor, 1½-percent dieldrin, or 2-percent parathion. In applying a dust by aircraft on onions grown for seed, use about 50 pounds per acre.

If you spray, apply one of the following insecticides at the rate indicated:

Insecticide	*Dosage (pounds per acre)*
DDT	**1½**
Dieldrin	**½**
Heptachlor	**½**
Toxaphene	**2**
Malathion	**¾**
Parathion	**¼**

Use either an emulsifiable concentrate or a wettable powder of one of

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[1] *Thrips tabaci.*

Onion thrips damage in center; surrounding plots were sprayed with insecticide.

these insecticides if you plan to apply the spray with a conventional high-gallonage sprayer. If you plan to apply the spray with a mist blower or a low-gallonage sprayer, use an emulsifiable concentrate. A wettable powder may clog the nozzles of these sprayers.

How much of the concentrate or powder you use to obtain the required dosage per acre depends on the strength of insecticide in the product you buy; follow directions on the label.

The amount of water you add will depend on the type of spray equipment you plan to use. If you use a high-gallonage sprayer, you will need from 100 to 150 gallons per acre; a low-gallonage sprayer, 25 to 50 gallons; a mist blower, 5 to 10 gallons.

Onions Grown for Bulbs

When treating onions grown for bulbs, watch small plants for infestation and apply an insecticide if there are about 10 thrips on each plant. Repeat treatment in 10 days or 2 weeks. In areas of heavy infestation, it may be necessary to treat fields at weekly intervals from 4 to 6 weeks.

Onions Grown for Seed

On onions grown for seed, you can apply any one of the insecticides until the plants begin to bloom. When the plants are blooming use only toxaphene to avoid poisoning bees, and apply it late in the evening.

If onion thrips injure plants before heading, follow the same control procedures recommended for onions grown for bulbs—that is, count the thrips, apply insecticide, and repeat treatment.

You can easily tell whether onion thrips are present in a seedhead by knocking it over the palm of the hand vigorously. If 3 or more thrips drop out, it is probable that 20 or 30 are still in the seedhead. Apply an insecticide.

In the South, apply an insecticide as soon as the seedheads start to open and continue treatment at weekly intervals every week for at least 6 weeks. In the North, one or two treatments after the seedheads start to open usually give sufficient protection.

When seedheads start to open, it usually isn't possible to drive a power sprayer or duster through the fields without damaging the plants. Insecticides may have to be applied with hand equipment or by aircraft.

In some localities where insecticides are used each year to control onion thrips, growers can design their planting pattern to allow for passage of power equipment to avoid mechanical injury to seedstalks. Some growers plant the onions in 10-row beds and leave a 12-foot alley between beds. A 15- or 18-foot boom is mounted on the side of a power sprayer or duster and then each bed is treated by one round trip.

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Twelve-foot roadways between 10-row beds allow for easy passage of sprayer.

Green Onions

When the onion tops are to be marketed or eaten, as with spring or green onions, use only malathion. Apply it at weekly intervals, beginning the treatment when the plants are about 6 inches high. Although malathion residues dissipate very rapidly, the insecticide should not be applied within 3 days before harvest.

Precautions

Most insecticides are poisonous. Handle them with care. Store them in closed containers so that they cannot be mistaken for food or medicine. Put them out of reach of children and farm animals. Make sure the containers are properly labeled.

Parathion is particularly poisonous and should be applied only by or under the supervision of a trained operator, who will assume full responsibility for its application and enforce the precautions prescribed by the manufacturer. It is extremely toxic if swallowed, inhaled, or absorbed through the skin: it may cause death. Do not attempt to prepare parathion dusts, but use them ready-mixed.

Do not apply DDT, parathion, toxaphene, heptachlor, or dieldrin to green onions. Do not apply malathion to green onions within 3 days before harvest.

Do not apply parathion to bulb onions within 15 days, or dieldrin within 14 days, or heptachlor within 5 days before harvest.

Fight Your Insect Enemies

Prepared by J. Wilcox and F. H. Shirck, entomologists, Entomology Research Division
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